THE AGRICULTURAL SITUATION

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A Brief Summary of Economic Conditions

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LOOK FOR A BETTER DOMESTIC DEMAND for farm products during the last half of this year compared with last. No boom, no runaway prices. Simply a sound improvement based upon an expected increase in industrial production stimulated by national defense programs. All farm commodities—for immediate consumption and for reserve—are in plentiful supply. Trouble is that surpluses in some basic commodities may pile up here as result of diminished exports to Europe. New market outlets must be found if production is to be continued at current levels. Besides the increases expected from continued economic recovery, the Federal Government is trying to raise domestic consumption by means of the Food Stamp Plan, Cotton Stamp Plan, school lunch, new industrial uses, and other programs. * * * Prices of farm products and cash farm income are higher this summer than last. Income for the full year 1940 probably will be larger than in 1939.

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Commodity Reviews

DEMAND: Improving

IMPROVEMENT in business conditions affecting the domestic demand for farm products continued into July. But as the month progressed industrial gains became more moderate.

Expansion of industrial output since April has been accompanied by a rise in industrial employment and pay rolls. Even though the greater part of the present rise in output may now be over, the effect of increases to date should be reflected by further gains in employment and pay rolls, in distribution, service, and other secondary lines. This means some additional improvement in the domestic demand for farm products even if industrial production levels off for awhile.

The longer-time outlook for domestic demand is dependent in large measure upon the ability of the major opponents in the European war to continue the fight and the rapidity with which our own huge defense program gets into full operation. Any sudden end to the European war, prior to a considerable increase in actual spending and production for national defense, might find business unable to withstand the loss of export orders which such a development would cause. If the bulk of British orders for military equipment were quickly taken over by our Government, the effects on domestic industry might not be serious, but otherwise the shock to business sentiment might well lead to widespread revision of inventory policies and cause trouble for a few months.

Industrial activity was rushed upward late in 1939 in part because inventories of both manufacturers and distributors were rapidly expanded after war started in Europe. Since this period of inventory-building, continental European markets have been cut off so that the possible war-inspired price rise against which business was preparing has become less probable. Under these circumstances an early end to the war might induce enough inventory liquidation to bring a relapse in the industrial conditions which affect the domestic demand for farm products, before our defense program matures sufficiently to prevent it.—

P. H. Bollinger.

EXPORTS: Dwindling

Spread of the European war area has been accompanied by the progressive closing of foreign markets to United States farm products. Continental European markets which have now been closed furnished in recent years an outlet for approximately one-third of our total farm product exports. The remainder was about evenly divided between the United Kingdom and all other countries.

Effects of the loss of continental European markets, in particular, and of other war-time interruptions and trade controls, on exports of individual farm commodities were especially noticeable in the statistics for May and June. Canned and dried fruit exports were reduced to a trickle during this period. Exports of pork products were only about one-fourth as large as they were a year earlier. Soybean exports, formerly going largely to Scandinavia and the low countries of Europe, have practically stopped.

The loss of foreign markets for United States agricultural products will, in general, continue for the duration of the war, although stoppage of supplies of certain competitive products formerly exported from continental Europe may later result in revival of some export demand for them. For instance, closing of the Mediterranean area may eventually lead to some increase in export demand for dried and canned fruits and vegetables; the same might be said

concerning possible diversion of British pork purchases to the United States through the closing of former European sources of supply. Evaporated milk exports have already felt the impetus of smaller competitive supplies in Europe. On the whole, the outlook for farm product exports is highly unsatisfactory—particularly for cotton, our most important export commodity.—P. H. B.

Index Numbers of Prices Received and Paid by Farmers

[1910–14=100]

Year and month	Prices received	Prices paid	Buying power of farm products[1]
1939			
July	89	120	74
August	88	119	74
September	98	122	80
October	97	122	80
November	97	122	80
December	96	122	79
1940			
January	99	122	81
February	101	122	83
March	97	123	79
April	98	123	80
May	98	123	80
June	95	123	77
July	95	122	78

[1] Ratio of prices received to prices paid.

PRICES: Mixed

Diverse movements characterized farm product prices in July. Hog prices were strong, whereas fruit and vegetable prices were weak. The offsetting effect of such changes was to leave the Government index of prices received by farmers at the same level in July as in June. This level—the lowest since the start of war in Europe almost a year ago—reflects the full effects of the sharp price declines which followed extension of active war fronts in May. However, farmers as a whole in July were still realizing about 7 percent more from a comparable volume of sales than they were a year earlier.

In addition to the large rise in farm prices for hogs in July some advances were also made in beef cattle, and in dairy and poultry products. Declines were substantial in prices of fruits and vegetables, as marketings recovered from effects of freezes early in the season. There was some recession in prices of grains, lambs, and a few other farm products.

The index of prices paid by farmers declined slightly in July, so that the relation of prices received to prices paid became somewhat more favorable to farmers.—P. H. B.

Prices of Farm Products

Estimates of average prices received by farmers at local farm markets based on reports to the Agricultural Marketing Service. Average of reports covering the United States weighted according to relative importance of district and States.

Product	5-year average, August 1909–July 1914	July average 1910–14	July 1939	June 1940	July 1940	Parity price, July 1940
Cotton, pound—cents	12.4	12.7	8.77	9.54	9.54	15.75
Corn, bushel—do	64.2	70.1	47.8	63.5	63.1	81.5
Wheat, bushel—do	88.4	86.2	55.7	67.4	61.4	112.3
Hay, ton—dollars	11.87	11.78	6.76	7.71	7.10	15.07
Potatoes, bushel—cents	69.7	81.5	[2]75.3	85.7	82.1	86.5
Oats, bushel—do	39.9	40.9	26.5	32.7	28.3	50.7
Soybeans, bushel—do	[1]	[1]	74.7	78.6	73.2	173.0
Peanuts, pound—do	4.8	5.1	3.4	3.5	3.4	6.1
Beef cattle, hundredweight—dollars	5.21	5.33	6.66	7.10	7.26	6.62
Hogs, hundredweight—do	7.22	7.25	6.26	4.82	5.78	9.17
Chickens, pound—cents	11.4	12.2	13.7	13.3	13.6	14.5
Eggs, dozen—do	21.5	16.7	16.5	14.4	16.4	[2]22.9
Butterfat, pound—do	26.3	23.5	22.0	25.6	25.9	[2]31.1
Wool, pound—do	18.3	17.5	21.8	28.6	27.9	23.2
Veal calves, hundredweight—dollars	6.75	6.74	8.11	8.46	8.56	8.57
Lambs, hundredweight—do	5.87	6.09	7.31	8.12	7.85	7.45
Horses, each—do	136.60	136.30	80.20	75.00	74.50	173.50

[1] Prices not available. [2] Revised. [3] Adjusted for seasonality.

COTTON: Prices Decline

Following the advance of about one-third cent in domestic spot prices from the third week of May to the third week of June, there was a slow but steady decline for the next 6 weeks. The average price of middling 15/16s in the 10 markets on July 31 of 10.25 cents was one-half cent below the high reached June 19. It was, however, nine-tenths cent above the low point of May, but with the exception of May was lower than the average for any month since last November.

In 3 of the 6 weeks ended July 25 domestic exports were 18 to 41 percent smaller than a year earlier. For the week ended July 11 exports were probably the lowest of any week since the beginning of the World War in 1914. In 2 of these 6 weeks, however, exports were approximately three-fourths or more larger than a year earlier, and not greatly different from those in the comparable period of 1938, despite the almost complete cessation of exports to continental Europe. From August 1 to July 25 total exports of 6,097,000 bales were 83 percent larger than to the corresponding date in 1939.

Domestic cotton mill activity seasonally adjusted appears to have increased during late June and early July. Domestic mill consumption now seems likely to approximate 7¾ million bales, including about 130,000 bales of imported cotton. In 1938–39 the total was 6,858,000 bales, including 122,000 bales of foreign cotton.

British cotton mill activity continued high during recent weeks despite some decline. Goods for military and civil defense purposes constitute an unusually large portion of the output. In continental Europe and the Orient cotton consumption apparently has declined further during recent weeks.—Maurice R. Cooper.

INCOME: Higher

Income from farm marketings in July probably increased by at least the amount which is usual for the season despite sharp declines in prices of fruit and truck crops and somewhat lower prices for grains and lambs. Factors contributing to the rise in income included large gains in marketings of grains, fruits, and vegetables, a steep rise in hog prices, and some gain in prices of dairy and poultry products.

Farmers' cash income from marketings and Government payments in the first half of 1940 was 8.3 percent (292 million dollars) more than in the first 6 months of 1939. The total was 3,824 million dollars in 1940 as compared with 3,532 million in 1939. Higher income was realized from the sale of both crops and livestock. Government payments were about 1 percent less than in 1939. Gains in income were especially large for the grain, tobacco, and dairy groups of products, although some increase was realized from sales in all the major groups.

The better consumer demand which is developing has been accompanied by substantial improvement in hog prices. Better consumer demand undoubtedly has also been a factor in preventing even larger declines in fruit and vegetable prices as marketings rebounded from the period of sharp curtailment induced by weather damage earlier in the season.

The following table shows income for June and cumulative totals for the January–June period of recent years:

Month and year	Income from marketings	Income from Government payments	Total
	Million dollars	*Million dollars*	*Million dollars*
June:			
1940	562	25	587
1939	531	52	583
1938	551	45	596
January–June:			
1940	3,414	410	3,824
1939	3,118	414	3,532
1938	3,190	257	3,447

—P. H. B.

WHEAT: 1940 Supplies

The domestic wheat supply for the 1940–41 season still seems likely to be about 1 billion bushels, about the same as for the season ended June 30. An increase this year of about 26 million bushels in the carry-over on July 1 about offsets the indicated decrease in the current crop. Production of winter wheat was estimated at 524 million bushels on July 1, while that for all spring wheat, on the basis of July 1 condition, was indicated at 205 million bushels.

With domestic utilization of wheat in the new marketing season expected to approximate 675 million bushels, the supply available for export and carry-over would be about 335 million bushels, or about the same as a year ago. Export prospects for 1940–41 are very uncertain. Exports in 1939–40 were about 46 million bushels.

World wheat supplies may be 100 to 200 million bushels smaller than a year earlier, when they totaled about 5,460 million bushels. The current crop may be less than consumption, which would reduce the world carry-over of wheat a year hence.—

R. E Post.

TOBACCO: Stocks Heavy

The 1940–41 marketing season for flue-cured tobacco opened this month with record stocks of around 1,410 million pounds, about 465 million pounds more than a year earlier. Indicated production as of July 1, however, is about 480 million pounds below the record 1939 production of 1,159 million pounds. Thus, the flue-cured supply at the beginning of the 1940–41 marketing season will be practically the same as that at the beginning of the 1939–40 season—more than 2 billion pounds.

The fire-cured and dark air-cured supply at the beginning of the 1940–41 marketing season probably will not be greatly different from that of 1939–40, when it was well in line with the disappearance of recent years. Exports in 1939–40 will probably show a reduction of about one-fourth, but around 13 million pounds of fire-cured are owned and held in the United States by foreign agencies.

The smaller crop of Burley in 1940 will result in a supply about the same as in the 1939–40 season. Burley is a small export type and, therefore, not greatly affected by the reduced export outlets. The 1940 crop of Maryland tobacco is expected to be about 5.5 million pounds below the 1939 crop. This reduction in production apparently will more than offset probable decreases in exports.

The prospect for some increase in consumer incomes is expected to result in a moderate increase in consumption of cigarettes and cigars in 1940–41.—Claudia Thomson.

FEED: Supplies Ample

Stocks of feed grains on hand and growing conditions July 1 indicated a 1940–41 corn supply of about 3.0 to 3.1 billion bushels, an oat supply of about 1,178 million bushels, and a barley supply of about 347 million bushels. If the grain sorghums crop is about average, the total supply of feed grains for 1940–41 will be 116 million tons. This would compare with 118 million tons last year, but with the exception of last year would be the largest supply since 1932–33. The number of grain-consuming animal units on farms is expected to decline during 1940 so that the supply of feed per animal may be a little larger than last year's liberal supply. Excluding corn under seal on October 1, however, the supply per animal would be somewhat smaller than last year, and also below the 1928–32 average.

If July 1 indications materialize, the 1940–41 hay supply will total 105 million tons, which would be the largest since 1927. Pasture conditions have improved substantially during the past 2 months, and early in July

they were somewhat better than on July 1, 1939, and much better than the July 1, 1929–38 average.

Recent declines in oats and barley prices have been accompanied by comparatively steady corn prices. Consequently the price of corn in much of the mid-western feeding area is now high relative to prices of oats and barley, in contrast to relatively low-priced corn during much of the 1939–40 marketing year. Oat and barley prices probably will remain relatively lower than corn prices during the next few months.

Very little corn will be exported during the next few months, except what is exported through the present Government export subsidy program. It is estimated that half of the 25 million bushels sold under this program has been exported and the remainder is scheduled to be exported before October 1.—Malcolm Clough.

HOGS: Supplies Smaller

The 8 percent decrease in the 1940 spring pig crop and the prospective decrease of about 12 percent in the number of sows to farrow this fall indicate that hog marketings in the coming marketing year, which begins next October 1, will be substantially smaller than in the current marketing year. Market supplies of hogs available for inspected slaughter in 1940–41 are expected to be around 10 percent smaller than the supplies of about 48 million head this year (1939–40).

Although there is little prospect for improvement in the export demand for pork and lard, present indications are that the demand on the part of domestic consumers for meats and lard will be well maintained in 1940–41. This, together with the reduction in marketings, should result in higher average prices for hogs in 1940–41 than 1939–40. The average price of hogs being received by farmers in the 1939-40 marketing year (October-September) is about $5.50.

A large part of the decrease in hog marketings in 1940–41 from a year earlier probably will occur after November or December 1940. With corn prices high in relation to hog prices many farmers will market spring pigs early and a larger than usual proportion of the spring pig crop probably will be marketed before January 1.

Hog prices advanced sharply in late June and early July, after declining steadily during May and most of June. In early July, the top price of hogs at Chicago reached $7, the highest level since last November. This rise in hog prices reflected chiefly a seasonal decrease in market supplies, some improvement in domestic consumer demand for meats, relatively large purchases of pork and lard for relief purposes by the Federal Government, and prospects for a decrease in hog marketings next year. After August hog marketings will increase seasonally but the increase in marketings from September through December probably will be no larger and may be smaller than the increase during the corresponding period of last year.—

Preston Richards.

CATTLE: Outlook

The most important features in the cattle outlook for the last half of 1940 are the prospects for about the same or slightly smaller total marketings of cattle for slaughter and a stronger consumer demand for meats than in the last half of 1939. The general level of prices of slaughter cattle in the last 6 months of this year probably will be higher than a year earlier, but prices of stocker and feeder cattle may not be greatly different from those of last year.

Marketings of cows and heifers will continue materially smaller than a year earlier during the remainder of 1940. Feed and pasture conditions of most areas are reasonably favorable and the tendency to hold back breeding stock to increase cattle numbers, which has been pronounced in the past year, will continue. The movement of stocker and feeder cattle into the Corn Belt

in the past 6 months has been somewhat smaller than a year earlier. This and other information indicate that the number of cattle placed on feed in recent months has been smaller than in the corresponding period of last year. Thus, while the number of cattle on feed is expected to continue large, the number fed during the last half of 1940 may be no larger than in the last half of 1939.

After declining during most of May and June, prices of most kinds of slaughter cattle rose in the last week of June and in early July. Prices of feeder cattle declined sharply during May and June and in early July they were not so high in relation to slaughter cattle as they were two months earlier. In mid-July prices of slaughter cattle were substantially higher than a year earlier while prices of feeder cattle were only slightly higher.—P. R.

LAMBS: Larger Crop

The 1940 lamb crop totaled 32.7 million head, about 3 percent larger than the 1939 crop of 31.9 million head. In the western sheep States, including Texas and South Dakota, this year's lamb crop is about 21.6 million head, or 4 percent larger than last year's crop. In the native sheep States the 1940 lamb crop is a little larger than the crop of last year.

Present indications are that supplies of sheep and lambs for slaughter during the remainder of the grass lamb marketing season, to December 1, will be larger than a year earlier. The late lamb crop in the western States has developed well and is larger than that of last year. A larger proportion of late lambs will be in slaughter condition than last summer and fall, when dry weather and short range feed resulted in poor development of late lambs. The early lamb crop in the native sheep States developed slowly as a result of unfavorable spring weather, and a larger than usual proportion of native lambs will be marketed after July 1 this year.

Although marketings of lambs for slaughter are expected to be larger than a year earlier during the remainder of 1940, the effect of the larger supplies on prices will be offset by the stronger consumer demand for meats.

Prices of slaughter lambs declined seasonally during June and broke sharply in July. Total inspected slaughter of sheep and lambs for the first 6 months of 1940 was about the same as that of a year earlier.—P. R.

WOOL: Consumption Up

Domestic mill consumption of wool during the second half of 1940 is expected to be somewhat larger than in the first half of the year. This will be a strengthening influence on domestic wool prices. The increase in mill consumption is expected to result from larger Government purchases of wool goods under the National Defense Program, from improvement in income of consumers, and from increased retail sales of wool goods. Changes in price in the next several months, however, will depend chiefly on developments in foreign countries, as the United States will be importing substantial quantities of wool during this period.

Domestic production of shorn wool in 1940 was estimated at 388 million pounds. This is 3 percent more than the production of about 377 million pounds in 1939.

Wool prices in the United States advanced from 1 to 5 cents a pound during June with the increased buying of raw wool by mills to fill Government contracts for wool cloth and blankets. Prices weakened somewhat, however, during the first half of July but continued substantially above the levels of July last year.

Recent European developments have altered considerably the situation in Southern Hemisphere wool markets. With most continental Eu-

ropean countries now included in the British blockade, the United Kingdom, Japan, and the United States probably will be the only important buyers of Southern Hemisphere wool exports so long as the blockade is maintained.—P. R.

FATS, OILS: Low Priced

Except for butter, fish oils, and linseed oil, prices of domestic fats, oils, and oilseeds have been at unusually low levels in recent weeks, chiefly because of large supplies of lard, greases, tallow, and soybean oil in the United States, and the closing of continental European markets to world trade. Lard prices in early June were the lowest since 1933, but some improvement has since taken place, and further improvement is indicated by the prospective reduction in the pig crop this year, which will be reflected in reduced lard output in the hog-marketing season beginning next October. On the other hand, increased production of soybeans and soybean oil are indicated for the 1940–41 season.

Prices of some imported oils, in contrast to prices for most domestic items, have recently attained high levels, largely as a result of the curtailment of imports from Europe (fish-liver oils, olive oil), the blockade of China (tung oil, teaseed oil), a short supply of perilla seed in Japan, and high rates for ocean shipments.—R. M. Walsh.

MILK: Outlook Good

Milk production is declining seasonally but is larger than at the same time a year ago. Compared with last summer pastures are better, there are more cows on farms, and feed supplies are ample. These factors have stimulated production and will probably result in relatively high production during the late summer and early fall unless the weather should be very unfavorable.

Prices of dairy products are decidedly higher than a year ago. Domestic consumption has also been high and stocks of dairy products are only about normal for the summer season.

There also has been some improvement in the foreign demand for dairy products; and in June, Government agencies purchased relatively large amounts of butter, cheese, evaporated milk, and dry skim for relief distribution.—E. E. Vial.

TRUCK CROPS: Plentiful

For the country as a whole, a preliminary estimate of the acreage planted to truck crops for market in 1940 shows an acreage about 3 percent less than that of 1939 but about 8 percent above the 10-year (1929–38) average. Decreases are reported for the South Atlantic, South Central, and Western groups of States. An increase is reported for the North Atlantic group, while the North Central States show no change.

The flow of truck crops to market has finally recovered from the effects of the late winter and spring freezes, and has resulted in a sharp increase in marketings. Prices declined precipitously in recent weeks, and in mid-July those of many commodities averaged below a year earlier.

Market supplies are now moving in large volume from the market garden areas and from States adjoining the large industrial centers of the country. Truck crop supplies usually reach a peak in the summer months, and it appears that supplies this summer will be plentiful. As compared with last year, summer production of commercial truck crops probably will be increased 13 percent this season. Increases are reported for lima beans, beets, cantaloups, carrots, sweet corn, lettuce, onions, peppers, spinach, tomatoes and watermelons, but decreases are indicated for cabbage, celery, cucumbers, eggplant, and green peas. For the late States, acreage reports indicate increases in prospect for cabbage, cantaloups, cucumbers, peppers, and tomatoes.—G. Burmeister.

This Changing Agricultural World

IV: Cotton

PROFOUND changes have marked the world's cotton enterprise during the last 25 years. World crops increased as new fields were brought into production. New fibers came on the scene to crowd millions of bales of cotton out of accustomed uses; but, in spite of the new competition, consumption of cotton in the world increased by a third. In fact, the gain in actual pounds was almost double that of the synthetic rivals. The greater production and consumption of cotton, however, brought no gain in international trade either in cotton or in goods. Industry shifted to new locations, both in the United States and in other parts of the world. Quotas, preferences, and barter rose to restrict trade in a world market once almost free.

PROBABLY the most significant feature of the last quarter century has been the great growth of national self-sufficiency throughout the world, both in raw cotton and in textiles. Many countries which were formerly importers of cotton textiles have accomplished by various means the establishment of textile industries capable of supplying partially if not wholly the needs of their own populations. This development has been especially marked in countries having abundant labor resources. It has been even more marked in those countries which, in addition, produced exportable surpluses of raw cotton.

Conversely, countries primarily industrial, equipped with well established textile plants, have quite generally intensified their efforts to develop new sources of raw material within their empires whenever indeed they have not been able to do so within their own borders. When in recent years progress in this direction could not be made with satisfactory rapidity, a number of the more important consuming countries have sought to attain a greater degree of self-sufficiency, first by stimulating the production of rayon and other synthetic fibers and then by compelling their people to use goods made from them in substitution for cotton goods.

THESE movements toward self-sufficiency are in part distinctly economic: They can be explained by such factors as comparative wage and freight rates, power costs, or the profit to be had from development and utilization of latent resources. In part, also, they have been motivated by nationalistic considerations. But, whether the causes be called economic or political, the results are of far-reaching consequence. Just before the outbreak of war in 1914 the mills of the world used annually about 21 million bales of cotton or a little more. Of that amount about 13 million bales had to be imported from other countries. Twenty-five years later the world seemed to have grown accustomed to using at least 28 million bales but imports were still only about 13 millions. At the beginning of the period only about 8 million bales were spun in the country of their growth. In the end, the quantity of cotton so spun had been nearly doubled by the addition of all of the 7 million bales by which total world consumption had increased.

Even more remarkable is the story of cotton goods. In the calendar year 1913, it is estimated that cotton to the amount of about 6¼ million bales was exported in the form of yarn and cloth from the countries in which it was processed to consuming countries less developed industrially. By 1937—the best of the years immediately preceding the European war—though consumption of cotton had increased by about 7 million bales, world exports

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of yarn and cloth had fallen to the equivalent of something less than 4 million bales of cotton.

THESE facts throw light on the position in which American cotton growers now find themselves. Of the two countries which originate the bulk of the world's exports of yarn and cloth—the United Kingdom must import all, and Japan nearly all, of the cotton used. A decline in the export trade of either country is reflected at once in its requirement of raw cotton. For example, Great Britain before 1914 was importing about 5 million bales of cotton, of which roughly 1 million were needed to supply Britain's own population, 500 thousand were reexported, and close to 3½ million passed through British mills and out of the country to supply the needs of consumers in other lands. India alone took about a third of all these exports. Under such conditions, roundly 3¾ million bales of American cotton—more tnan the total exports from the United States to all countries in 1938–39—could readily be sold in Great Britain. But by 1939 growing self-sufficiency had taken all but a remnant of the goods market in India and had made deep inroads in the trade elsewhere. To supply her total domestic and export demand Britain was then requiring little more than 3 million bales altogether, and was taking from the United States average yearly imports of only about 1¼ million bales.

THE loss of 2½ million bales in the annual sales to Great Britain is the severest single blow that American cotton growers have sustained in 25 years. For some years, however, the effect of Britain's ebbing demand on the total of American export trade was concealed by the rise of exports to the Orient. Japan's mills, which before 1914 had seldom needed more than 400,000 bales of American cotton, increased their takings gradually until in the early thirties they were close to 2 millions. This increase corresponded with gains in Japan's exports of cotton goods, part of which was at the expense of British trade. But lately Japan in her turn has felt the pressure of growing self-sufficiency in her customer countries, and has seen the trend of her exports turn downward. By 1939 exports from the United States to Japan had fallen about to the level of 850,000 bales a year—less than half the volume a few years before. In the case of Japan, however, American cotton exports have suffered from growing self-sufficiency even more within Japan itself than in Japan's overseas markets. Japan is one of 3 great users of cotton which have sought to achieve a high degree of self-sufficiency by requiring their own people to use home-produced rayon in place of imported cotton. Germany and Italy are the others.

IN 1913 the total amount of rayon produced in the world barely more than equalled the weight of 50 thousand bales of cotton. By 1939 it had increased almost a hundredfold to 4.7 million bales. Certain characteristics can be noted in the countries in which the greatest gains have taken place—United States, United Kingdom, France, Germany, Italy, and Japan. These countries stand relatively high in the scale of living standards; they are primarily industrial in their economies, and (with the exception of the United States) they are generally dependent upon imports for their supplies of raw cotton. A fourth feature, and one to be particularly noted, is that the 3 countries which lead in the use of rayon—Japan, Germany, and Italy—have enforced the substitution of rayon for cotton by law.

In 1939, the combined production in these countries of filament yarn and staple fiber together was nearly two-thirds of the world's total, and equalled the weight of more than 3 million bales of cotton. Germany,

which in the 3 years before 1914 took about 2¾ million bales of cotton from the United States alone, has managed since 1933 with less than 1¼ millions from all sources. Italy was taking less cotton just before the second World War than before the first; and in Japan, with all her unique gains in textile exports, cotton imports had receded to about the levels of the early 1920's. Cotton's gains of a quarter century have been in countries formerly less advanced industrially—principally India, Russia, and China—all, of course, important cotton producers.

THE United States might count itself fortunate had its opportunities to export cotton been limited only by the failure of total world exports to expand in a quarter century; but as matters have developed, competition among cotton-growing countries for shares in the total of world export trade has also greatly intensified. The urge to grow cotton has not been confined to countries with domestic industries to supply, but has been felt in many countries seeking to bolster income from exports. Brazil, Argentina, Peru, Mexico, Iran, Egypt, the Sudan, the British colonies and Mandated territories of East and West Africa, the Belgian Congo and other countries in lesser degree have pressed for and gained larger shares in the world's trade at the expense, primarily, of the United States. Thus, while in the 5 years 1909 to 1913 the United States contributed on an average about 8.8 million bales to the known total of about 12.9 million bales of world cotton exports—that is to say about 70 percent,—from 1934 to 1938 the United States' share was but 5.3 million bales or about 40 percent. Conversely, the share of foreign countries in the same time increased from roundly 30 percent to 60 percent.

TWENTY-FIVE years ago the world market for cotton was for practical purposes a free market. In raw cotton, quality and price were the factors generally governing competition; on cotton goods, tariffs in the principal importing countries were not very considerable. But in this respect, also, great changes have taken place. Tariffs have been raised in many countries as a means either of protecting domestic industry or of establishing bargaining positions. By such arrangements as the agreement with Japan of 1934, since renewed from time to time, and that with the United Kingdom of 1939, India has sought to shelter her position in the cotton export markets by granting duty concessions on imports of cotton goods from the two countries, conditioned upon their taking certain minimum quantities of her raw cotton. Egypt has had under consideration a plan to grant quotas for the import of cotton goods from each of a number of countries proportioned on the share of each country's takings in her exports of raw cotton.

Consuming countries also have contributed to the change. Germany, since 1933, has secured the major part of her cotton supplies by barter arrangments of one kind or another. Italy in recent years has allocated foreign exchange for the purchase of cotton from the proceeds of exports of cotton goods. Japan, designating this device the "link-system," has applied similar measures since July 1938. Competition in cotton goods has been further regimented by duty concessions in the British Dominions, import quotas in the crown colonies, and restrictions of various kinds in such important markets as Argentina, Egypt, and the Netherlands East Indies.

IN THE United States, rising living standards were attended by an increase in per capita consumption of cotton up to the time of the World War, but since that time there has been no further gain, if indeed cotton has quite held its own. A population

increase, however, from 96.5 millions in 1913 to 130.2 in 1938 has increased the total domestic demand. American mills, which on the eve of the World War used only about 5 to 5⅓ million bales (including a substantial amount exported as goods), raised their consumption to an average of 6⅔ millions in the five years ended with August 1939, and reached over 7¾ millions in 1936–37—a record high level up to that time. Exports of textiles meanwhile had been much reduced.

An important change in the United States, however, was the continued shift of mills away from the New England States to the cotton-growing States of the Southeast. In 1913, 2.9 million bales—slightly over 52 percent of the cotton used in the United States that year—was spun in cotton-growing States. In 1939, the South's consumption had more than doubled to 5.8 million bales, and the percentage was 85. This shift, important from the industrial and civic standpoints, has also certain important implications for agriculture. It means that cotton States east of the Mississippi River, which 25 years ago contributed substantially to the total of cotton exports, have not for some time done so and now find all but a small fraction of their market in the Carolinas, Georgia, Alabama, and Virginia. By the same token, States west of the River, some of which once shipped considerable amounts of cotton coastwise to New England, find themselves at a comparative disadvantage with their eastern neighbors in point of the freight-haul to the southeastern mill centers, and with their interests consequently more than ever identified with exports.

TOWARD the world situation, however, cotton growers whether of the eastern or western belt have much the same outlook. The buoyancy and expansion of the great world market for American cotton which characterized the scene in pre-1914 years are, at least for the present, gone. In their place are self-sufficiency over large areas, new competition, restricted markets, and huge surpluses which a growing home consumption can only slowly reduce. The present war has brought no genuine relief but rather an intensification of these problems. Fortunately, however, the economic mechanisms of today have proved capable of absorbing the first shocks of the war. Nineteen hundred and thirty-nine passed without the closed markets, 5-cent cotton, or the buy-a-bale movement of 1914. It remains now to be seen if, in the post-war reconstruction ultimately to come, ways cannot be found to meet the basic difficulties in the world situation.

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War and the World's Merchant Marine

AT THE outbreak of the European war the available mechanically propelled dry-cargo vessel tonnage of 100 tons gross and upwards was approximately 30 percent greater than at the beginning of the World War, a figure that was substantially more than the increase in international trade during this period. An additional, but indeterminate volume should be allowed for other factors such as the improvements in vessel speed, safety, size, and age of ships. Shipping is now conducted in faster, safer, and more modern vessels than it was a quarter century ago.

A larger number of vessels are now suitable for transoceanic service—vessels measuring over 2,000 tons gross each—than in 1914. Because of the adverse effects of a major war upon the supply of transport capacity, the

world's merchant fleet was inadequate to transport the volume of world trade in 1917. Vessel space was at a premium, freight rates rose to unprecedented levels. All things considered, the present world's merchant fleet can carry a larger quantity of freight within a given period of time than is indicated by the volumetric increase alone since 1914.

RECENT military events have reduced the amount of new ship construction, but there appears no immediate danger of a shortage of vessel-carrying capacity and of sharply rising freight rates. The German warfare against merchant ships has not been as successful as it was in 1917 and 1918, although the current monthly rate of destruction has increased. The recent extension of the British blockade over the imports and exports of the French North African colonies and virtually all of Europe has restricted the movement of vessels to these countries, and it has forced the owners of the vessels to seek alternative employment for them.

Control over most of the merchant tonnage of the Scandinavian and lowland countries now gives England an adequate amount of tonnage for its own use. Indeed, this tonnage is large enough to permit control of freight rates on most routes. Also, the extension of the United States Neutrality Act to include the Mediterranean area has released about 270,000 tons of American vessels for operation on other routes. An accumulation of shipping has been reported recently at various ports along the United States Atlantic seaboard and at the River Plate in Argentina.

How long this relatively favorable shipping situation will continue is of course unpredictable. It is a fact that, although there appears to be a good margin of supply of shipping space in relation to the demand, the production of new ships has been sharply restricted in recent months. It was believed at the outbreak of the European War that the shipbuilding industry could produce in 1940 at least as much tonnage as in 1938. Recent events in Europe have altered this prospect.

PRIOR to the World War, well over half of the new tonnage constructed in the world was built in the United Kingdom. In 1913, the British shipyards produced more than 63 percent of the world's total. In consequence, international commerce was largely dependent upon British shipways to minimize the losses due to military action and ordinary marine risk. Failure of these yards to produce their normal tonnage and the inability of neutral countries to expand production during the first 3 years of the war accentuated the shortage of vessel space.

International commerce in 1938 was much less dependent upon British shipyards. The decline in British production during the post-War period and the increased shipbuilding activity of other countries—notably Japan, Germany, Italy, Holland, Sweden, and Denmark—had decreased the British relative position to less than 36 percent of the world total. But it appeared at the outbreak of the European War that even without the German shipyards, the remainder of the world would construct at least as much tonnage as was produced in 1938, excluding that built in Germany.

THE forecast of production in 1940 seemed sound in view of the larger merchant shipbuilding program in the United States, the possibility that other neutral shipbuilding countries might increase their production, and the much larger shipbuilding program initiated by the United Kingdom. However, the extension of the war to include the western coastal countries of Europe has changed this outlook.

In 1938 the shipways in these countries, including Sweden, launched

about 650,000 tons gross or 25 percent of a total of 2,553,000 tons produced in the world outside of Germany. The present status of the Swedish yards is unknown, and the yards in the other coastal countries are now controlled by the German army. In view of the German occupation of the French channel ports, it will be difficult for British yards on the eastern and southeastern shores of Scotland and England to continue operations.

Present military operations also will require the British to use more of their shipways for naval construction and repair. The entrance of Italy into the war is another adverse factor. Italian yards built 94,000 tons in 1938 and the United States Maritime Commission had estimated that Italian yards would produce about 150,000 tons gross this year.

THERE are now only 2 major shipbuilding countries—United States and Japan—not affected by the German occupation of Norway, Denmark, Holland, Belgium, and France, and by the entrance of Italy into the war. It has been estimated that United States shipyards will construct about 450,000 tons gross in 1940 in contrast with 201,000 tons in 1938. It is doubtful that this program can be further expanded without the construction of additional shipways, in view of the recently announced national defense program. Japan is not likely to produce as much tonnage as in 1938, because of its advanced naval shipbuilding program and its war in China. Furthermore, Japanese shipyards are handicapped by lack of steel and machine tools.

HOBART S. PERRY.

Vegetables in the American Dietary

THE consumption of vegetables in the United States falls into three major groups: (1) Potatoes, including sweetpotatoes, (2) other fresh vegetables, and (3) canned vegetables. The accompanying chart contains index numbers of the annual per capita consumption of each of these major groups during the past 20 years, and the tables contain 5-year averages of the per capita consumption of the principal items within each group, in terms of the estimated weight available for sale in retail markets.

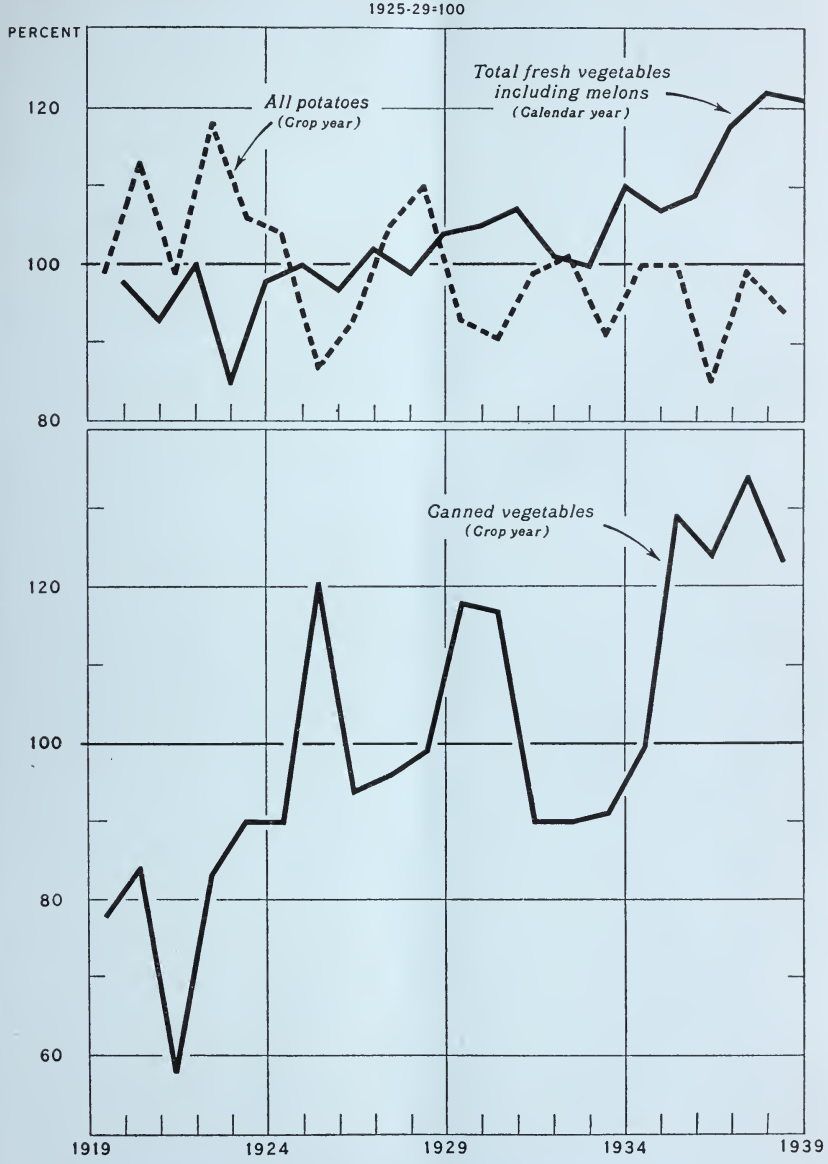
The per capita consumption of Irish potatoes during the 20 years 1919–20 to 1938–39 has been characterized by large fluctuations around a slowly declining trend. Consumption during the 5 years 1934–35 to 1938–39 averaged about 133 pounds per capita compared with 148 pounds during the 5 years 1919–20 to 1923–24. This decline is generally associated with a general dietary shift away from foods having a high starch content. The growth of population, however, has more than offset the decline in the per capita consumption of Irish potatoes, with the result that total domestic disappearance during the 5 years 1934–35 to 1938–39 averaged about 300 million bushels compared with about 283 million bushels in 1919–20 to 1923–24.

The per capita consumption of sweetpotatoes during the last 5 years of the period was 3.5 pounds below the average of the first 5 years, but this has not been connected with any well-defined trend. From an average of about 27 pounds during the 5 years 1919–20 to 1923–24, consumption dropped to about 20 pounds in the 5 years 1924–25 to 1928–29, but recovered to 22 pounds in 1929–30 to 1933–34 and to 23 pounds in 1934–35 to 1938–39. The consumption of sweetpotatoes, especially important in the Southern States, is affected by the cotton situation. When income from cotton is relatively low, there is a tendency to supplement purchased food supplies by increasing sweetpotato output, and to

turn away from this source when income from cotton is high.

THE per capita consumption of fresh vegetables, excluding potatoes, averaged about 164 pounds during the 5 years 1935–39, compared with 133 pounds during the 5 years 1920–24, an increase of approximately 23 percent. These estimates are greatly in excess of the per capita production of commercial truck crops for fresh market, which rose from 50 pounds in 1919 to 102 pounds in 1938. This difference is largely accounted for by allowances for the products of market

INDEX NUMBERS OF PER CAPITA CONSUMPTION OF VEGETABLES



and city gardens not covered by published estimates and by computing per capita consumption on the basis of non-farm population, which assumes that practically all commercial truck crops are consumed in urban areas and that the per capita consumption of vegetables grown and consumed on farms is on the average equal to that in the urban areas.

The general increase in the consumption of fresh vegetables has been the result of an increased consumption of most of the individual vegetables. Particularly marked was the rise in the consumption of lettuce from 7.8 pounds during 1920–24 to 13.8 pounds in 1935–39; of carrots from 3.4 pounds to 8.4 pounds; and of celery from 5.6 pounds to 9.1 pounds. Cantaloups, watermelons, and spinach do not exhibit definite trends for the period as a whole. The consumption of cantaloups averaged 8.9 pounds per capita during the 5 years 1920–24, rose to 10.3 pounds during 1925–29, and returned to an average of 8.8 pounds during the 5 years 1935–39. The consumption of watermelons averaged 27.3 pounds per capita during the 5 years 1920-24, declined to 25.6 pounds during 1925–29, and has since risen to an average of 28.5 pounds during the 5 years 1935–39. The consumption of spinach averaged 3.3 pounds during 1935–39 compared with 3.5 pounds in 1920–24, but this does not imply a downward trend for the period as a whole. Per capita consumption during the 10 years 1925–34 averaged about 0.5 pound below the 5 years 1920–24, but consumption during the 5 years 1935–39 has tended to return to the earlier level. With the growth of population, the total annual disappearance of fresh spinach has risen to about 426 million pounds during 1935–39 compared with about 362 million pounds during 1920–24.

THE consumption of the canned vegetables included in the accompanying table has increased from an average of about 14 pounds per capita during the 5 years 1919–20 to 1923–24 to an average of 22 pounds during the

Selected Canned Vegetables: Apparent Per Capita Consumption, 1919–38 [1]

Item	1919–20 to 1923–24	1924–25 to 1928–29	1929–30 to 1933–34	1934–35 to 1938–39
	Pounds per capita, canned weight			
Asparagus	0.38	0.48	0.45	0.48
Snap beans	.72	1.24	1.54	1.76
Beets	.23	.37	.43	.63
Corn	3.60	3.90	3.56	3.98
Peas	3.06	4.18	3.82	4.66
Pumpkin and squash	------	.36	.53	.40
Spinach	.48	.65	.66	.88
Tomatoes	5.10	6.14	5.78	5.72
Tomato pulp, juice	.59	.62	1.41	3.33
Total	14.16	17.94	18.18	21.84

[1] Consumption in terms of canned weight during year beginning July 1. Total annual consumption calculated from canned pack, stocks, exports, imports, and shipments to the insular areas, except for pumpkin and squash, spinach, and tomato pulp and juice, for which only pack figures are available. Per capita consumption calculated on the basis of total population.

Vegetables, Fresh: Apparent Per Capita Consumption, 1920–39 [1]

Item	1920–24	1925–29	1930–34	1935–39
	Pounds per capita			
Asparagus	0.7	1.2	1.7	1.9
Beets	1.8	1.9	3.0	2.7
Snap beans	5.2	4.5	6.0	6.9
Cabbage	24.5	23.2	21.8	25.2
Carrots	3.4	4.9	7.1	8.4
Cantaloups	8.9	10.3	9.3	8.8
Cauliflower	1.1	1.9	2.2	2.6
Celery	5.6	7.2	8.6	9.1
Corn	8.3	7.1	7.5	8.8
Lettuce	7.8	12.3	12.8	13.8
Onions	12.8	13.5	14.1	15.4
Peas	.7	1.2	1.5	1.7
Spinach	3.5	3.0	3.0	3.3
Tomatoes	13.5	14.0	13.6	16.6
Watermelons	27.3	25.6	27.0	28.5
Other [2]	8.3	9.7	8.9	10.3
Total, excluding potatoes	133.4	141.5	148.1	164.0
Potatoes	147.9	142.4	132.5	132.6
Sweetpotatoes	26.9	20.2	22.4	23.4
Total	308.2	304.1	303.0	320.0

[1] Consumption in terms of estimated weight available for sale in retail markets during calendar year, except for potatoes, sweetpotatoes, and onions, which are calculated on a crop-year basis. Total annual consumption is calculated from production adjusted for exports, imports, and shipments to insular areas, where they are significant. Production includes commercial production plus estimates for market and city gardens. Per capita consumption calculated on the basis of urban population except for potatoes, sweetpotatoes, and onions, for which total population figures were used.

[2] Artichokes, lima beans, cucumbers, eggplant, kale, peppers, pimientos.

5 years 1934–35 to 1938–39, an increase of over 50 percent. Converted to a fresh equivalent, this represents an increase from about 25 pounds per capita to 37 pounds per capita. This is considerably less than the reported production per capita of commercial truck crops for processing, which rose from 39 pounds in 1919 to 55 pounds in 1938. The bulk of the difference can be accounted for by the fact that these figures do not include cabbage for kraut, cucumbers for pickles, or that part of the tomato crop used for sauces and soups. In addition, the series covers only products canned, and not those frozen or otherwise processed. It does, however, include pumpkin and squash, which are not included under truck crops for processing.

As with the vegetables consumed fresh, practically all the individual items contributed to the general expansion in the use of canned vegetables. Particularly important were snap beans, peas, and tomato juice. The expansion of the latter has been phenomenal. Its use was practically negligible prior to 1929, but has averaged about 2.5 pounds per capita during the 5 years 1934–35 to 1938–39.

THE predominant influences on the consumption of vegetables are changes in dietary habits which show themselves in long-time trends. This is particularly true of fresh vegetables, excluding potatoes. The consumption of canned vegetables shows a well-defined cycle which is correlated with the expansion and contraction of the national income, whereas the consumption of sweetpotatoes shows some tendency to move inversely with national income. The effect of income upon the consumption of Irish potatoes and other fresh vegetables is small and not well defined. Changes in the available supplies due to fluctuations in yield are of course important in determining consumption in any given year. This factor is particularly important in the case of Irish potatoes.—J. P. Cavin.

Our Changing Farm Population

THE farm population of the United States totals more than 32,000,000 persons. This represents an increase of approximately 2,000,000 since 1930. The farm population increased during this period at about the same rate as the total population, with the result that the ratio of farm to total population—about 1 to 4—is practically the same now as it was in 1930. The maintenance of this proportion is a new development in American population trends. Heretofore the farm population increased less rapidly than the nonfarm population; indeed, during the 20 years preceding 1930 the farm population declined both in total and in proportion of the whole population.

AN increase in farm population at the present time accentuates the growing pressure of population on agricultural income. Technological changes in agriculture have kept pace with those in industry, with the result that labor requirements for agricultural production have been decreased. Normal requirements in farm production for both domestic and foreign outlets can now be met by approximately 1,600,000 fewer workers on farms than in 1929—or a total of about 3,500,000 fewer farm people than there are today. The estimates of employment on farms show a decrease of more than 300,000 persons during the last decade. But while employment opportunities on farms were de-

creasing, there was less likelihood that farm people would secure jobs if they moved away. Many stayed. The unemployment on farms reported in the 1937 Census of Unemployment is largely a result of this decrease in migration off the farms.

There was no decrease in the number of young farm people reaching maturity during the 1930's; nevertheless, the volume of net migration from farms during the decade was only a little more than one-third the net migration during the 1920's. Consequently, there are approximately 3,500,000 more persons living on farms than if the migration from farms had been at the same rate as during the 10 years before 1930. Since young adulthood is normally the time of greatest migration, the effect of the reduced migration from farms has been especially marked in this group. Two million of this 3,500,000 are young people between 15 and 30 years of age.

CHANGES in farm population were not uniform throughout the country during the past decade. In some areas—especially areas best adapted to commercial farming, including the sections which were most severely hit by drought—there was enough migration from the farms to bring about a reduction in farm population. But in other areas there were general increases large enough to show an increase for the entire country.

One result of these changes was to increase the number of persons living in the more densely populated farm areas and to decrease the number living in the less densely populated farm areas. Three of the major geographic divisions were about equal in farm population in 1930—East South Central, 5,052,000; West South Central, 5,275,000; and West North Central, 5,030,000—but by 1940 the number of people on farms in the East South Central States had increased to 5,624,000; in the West South Central States to only 5,303,000; and in the West North Central States there was a decrease to 4,840,000.

There was some movement from towns and cities to farms, especially during the early years of the decade, but the increase in total farm population cannot be accounted for as the result of an exceptionally large back-to-the-land movement. The fact is that more people moved to farms between 1920 and 1930 than between 1930 and 1940—approximately 13,000,000 compared with 10,600,000. The number of persons moving from farms to towns and cities decreased more sharply in the latter decade—from 19,400,000 to 12,800,000. With movement from farms more sharply reduced than movement to farms, there was a reduction in the net volume of migration—from approximately 6,000,000 to only 2,179,000.

ONE of the currents of migration which attracted much attention during the decade was from parts of the Great Plains and adjacent areas to the Pacific Coast States. This movement is still continuing. The areas from which the migrants went were areas of considerable outmigration prior to 1930—the West South Central, which reported increases between 1920 and 1930, and very small increases since 1930; and the West North Central States, which lost farm population in both decades.

In all these areas there had been some increase in farm population when industrial employment opportunities were curtailed after 1929. The

Changes in Farm Population, 1930–40

Division	1930	1940	Increase or decrease
	Thousands	*Thousands*	*Thousands*
New England	568	746	+178
Middle Atlantic	1,692	1,941	+249
East North Central	4,442	4,852	+410
West North Central	5,030	4,840	−190
South Atlantic	5,864	6,432	+568
East South Central	5,052	5,624	+572
West South Central	5,275	5,303	+28
Mountain	1,122	1,149	+27
Pacific	1,124	1,358	+234
United States	30,169	32,245	+2,076

increases continued until 1934. After that the need for alternative opportunities was greatly increased by severe droughts. In some parts of these areas, continued mechanization of farming operations had further reduced opportunities for farmers or even displaced those already operating farms. As a result, there was a migration from the farms and villages of these areas during the latter part of the decade, much of which went to the Pacific Coast States.

Studies of migration show that the number of people moving into Washington, Oregon, and Idaho was about the same during the 1930's as it had been during the 1920's. Similar studies in California show that somewhat fewer persons moved in during the 10 years after 1930 than during the 10 years before. The problems associated with these migrations have been due largely to differences in the types and resources of the migrants as well as the economic opportunities in the areas receiving them. A large proportion of the migrants between 1920 and 1930 was readily absorbed into an expanding urban and rural economy. Many brought sufficient capital to assure continued self-support. The migrants of recent years had little or no capital and large numbers entered a labor market in which the demand is for unskilled seasonal workers. Many who have gained a foothold on the land at their new locations have settled on small unproductive farms, not suited to permanent occupancy.

MANY of the migrants to the Pacific Coast States came from areas where population pressure had already become acute by 1930. This was especially true in parts of Eastern Oklahoma and the Boston Mountains, and surrounding areas in Arkansas. Here farm incomes in 1929 were low and rates of natural increase have been high. Rates of migration from rural areas were also high before 1930. Because of high birth rates in these areas in the past, the population of working age continued to increase rapidly after 1930, but the previous outlets in industrial employment were no longer available in the same volume as before. These conditions, and a lack of resources for profitable employment locally, created a serious relief problem. The current migration to the Pacific Coast States has provided a partial substitute for the earlier migrations to industrial centers. In some other areas contributing large numbers of migrants, changes in farm organization have reduced employment opportunities in spite of the continued increase in population of working age.—CONRAD TAEUBER.

Surplus Commodities for School Lunches

WITHIN the past year the school lunch program has become an important outlet for agricultural surpluses purchased by the Surplus Marketing Administration (formerly by the Federal Surplus Commodities Corporation). Since 1935, schools have been eligible to receive surplus foods for free lunches for needy and undernourished children. In August 1939, however, the F.S.C.C. announced the expansion of its school lunch work, setting for its goal the service of 5,000,000 children. Special personnel were appointed to facilitate the growth of the program in the various States.

Results of these activities are indicated in table 1, which gives statistics for March of each year, that being usually the peak month of the program. It shows that in March of this year

nearly 2.5 million children were served daily lunches, consuming 14.7 million pounds of surplus commodities. Both of these figures are about 2.8 times the corresponding figures for 1939. Table 2 lists some of the commodities which schools have received in largest quantity during the past school year. School lunches accounted for almost 10 percent of all surplus foods distributed last March.

Continuation of the work of the Surplus Marketing Administration in conjunction with WPA, NYA, and many other organizations and agencies, Federal, State, and local, forecasts a further marked increase in the program next year. Meanwhile, plans have been made for its continuance during the summer at camps and playgrounds.

THE school lunch movement is no innovation, of course. Free or low-cost lunches for poor school children were provided in many places in Europe before the turn of the century. Successful experiments in the same direction were started in many of the larger cities in the United States during the 1900's. Agricultural extension programs have fostered hot lunches in rural schools for many years. * * * The plight of millions of children during the depression, however, reawakened public concern for child welfare. Countless teachers contributed from their own resources to feed pupils who came to school hungry. Private and public agencies took up the work on an emergency basis. With the development of a Federal relief program agencies of the Federal government came to their aid.

The Children's Bureau of the United States Department of Labor has estimated that at least one-fifth of all school children show physical defects indicative of malnutrition. Among the urban families included in the National Health Survey in 1935–36, more than 25 percent of the children under 16 years were in families receiving public assistance in some form. An additional 22 percent were in non-relief families of income under $1,000. Such figures as these give at least some suggestion of the magnitude of the problem which the school lunch program attacks. Federal aid in meeting it is important, since the areas in which the need is greatest are commonly those where local means are least adequate.

THE mechanism by which surplus commodities are provided for

Table 1.—Statistics of the school lunch program for March of each year, 1937–40

Year	Children	Schools	Food distributed	Value of food distributed
	Number	*Number*	*Pounds*	*Dollars*
1937	342,031	3,839	1,192,256	85,062
1938	567,000	11,021	3,944,770	201,318
1939	892,259	14,075	5,244,211	408,804
1940	2,483,578	35,658	14,706,698	1,107,782

Table 2.—Principal commodities distributed to school lunch programs, July 1, 1939–May 31, 1940

Commodity	Pounds distributed	Number of months during which distributed
Dairy products:		
Butter	4,744,291	11
Eggs	1,332,464	11
Cereals:		
White flour	7,459,540	11
Graham flour	2,996,086	11
Whole wheat cereal	512,385	11
Corn meal	4,655,956	11
Corn grits	1,676,192	7
Rolled oats	2,334,138	7
Vegetables:		
Navy beans	912,695	11
Lima beans	816,803	11
Onions	1,739,487	11
Fruits:		
Apples	30,989,167	10
Oranges	15,253,273	11
Pears	1,360,645	9
Peaches—fresh	168,310	3
Peaches—canned	5,087,234	8
Peaches—dried	625,521	9
Dried prunes	1,681,361	9
Raisins	3,419,618	11
Grapefruit juice—canned	1,634,510	11

Total distribution to school lunch programs, July 1, 1939, through May 1940 was 93,308,992 pounds, at an estimated value of $6,944,133.

school lunches is essentially simple. The Federal Government, through the Surplus Marketing Administration, buys quantities of various crops in an effort to strengthen market prices to growers. These commodities are then shipped directly to welfare or relief agencies in the States, who apportion them among relief families and certain other types of recipients—including school lunch projects. Allocations to schools are based on the number of children certified as "needy and/or undernourished," certification being most commonly made at the instance of school authorities or public health or welfare agencies, usually after investigation of the children's families.

To receive commodities, the sponsor of the project must agree that they will be used to supplement rather than replace normal food purchases. Government purchase of surpluses helps farmers, essentially, by increasing the effective demand for their products. But if the persons receiving the commodities substitute them for their own regular purchases, the effect of the Government program on the market is correspondingly offset. Actually, such substitution appears to be less of a problem in the school lunch program than in most other methods of surplus disposal. Some families may decrease their food budgets when their children receive free lunches at school, but this is not likely to be important among families already on short rations.

On the other hand, it is estimated that more than 75 percent of the school lunches in the program last March were new projects, in the starting of which the availability of free surplus commodities was usually a deciding factor. Foods which local sponsors buy to use with their surplus allotments constitute a new, complementary demand for foodstuffs, over and above that represented by the Government purchases. This tends further to increase prices and sales of farm products, with corresponding benefits to the national farm income. From the farmer's point of view, this is a somewhat unique advantage of the school lunch program as an outlet for surplus commodities.

ANOTHER aspect of the program of interest to farm families is the extensive participation among rural schools. It is estimated that nearly 75 percent of the schools participating last March, and over 50 percent of the children benefited, were in rural communities. * * * The primary purpose of the legislation which makes possible the school lunch program is, of course, aid to agriculture. From the point of view of the welfare of the Nation as a whole, however, the benefits to needy children appear equally important. Particularly during the present period of interest in national defense there is heightened realization of the value of a program dedicated to to improving the nutrition of the oncoming generation.

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and M. I. KLAYMAN.

A Study of Fertilizer Consumption

FARMERS in recent years have spent about 200 million dollars annually for commercial fertilizers. In 1938 approximately 7.5 million tons were used. A recent study based upon reports of crop correspondents shows that fertilizer consumption varies widely in different parts of the country, and for different crops in the same section. It shows that farmers along the Atlantic coast still use fertilizers to a much greater extent than do farmers in other parts of the country, and that crops of high value

per acre provide large outlets for fertilizer in relation to acreages grown.

The study applies to crops harvested in 1938 when the quantity of fertilizer used was the second largest since 1930 but not greatly different from the average consumption in the years 1925–30. More than 70 percent of the fertilizer used on farms in 1938 was applied to the crops covered by the study.

COTTON formerly provided the largest single outlet for fertilizer use. But with the marked reduction in cotton acreage, more fertilizer was used on the corn crop in 1938 than on cotton. For the entire country the corn crop uses fertilizers in about the same proportion as it utilizes cropland. Fertilizer applications on corn were heaviest in New England but also relatively high in the Middle Atlantic and the South Atlantic States. Little fertilizer was used on the corn crop in the Mountain States, the North Central States, and the Pacific Coast States.

Of the crops grown on extensive acreages fertilizer use on cotton was the most pronounced. For the entire country fertilizer use per acre on cotton was about 200 percent above the average quantity used on corn. Fertilizer use in the South Atlantic States averaged about 350 pounds per acre and was about 75 percent greater than the average quantity used in the East South Central States and fifteenfold greater than the average of the West South Central States.

Use of commercial fertilizers on wheat was most pronounced in the South Atlantic and the Middle Atlantic States. Practically no fertilizers were used in the important Great Plains, Mountain, and Pacific Coast wheat areas. Although fertilizer use on wheat averaged higher than for corn in most groups of States, wheat acreage is concentrated in States where little or no fertilizer is used, with the result that for the country as a whole fertilizer used per acre on wheat was less than for corn.

Less fertilizer was used on oats than on wheat. Average quantities per acre were heaviest in the South Atlantic and Middle Atlantic States. Only small quantities of fertilizer were used on oats in the Mountain, West North Central, and Pacific Coast States.

FOR the country as a whole, per acre applications of fertilizer on tobacco average heavier than for any other major crop. Less than 0.5 precent of the land for crop use is planted to tobacco but about 7 percent of the total fertilizer was used on the crop. In the South Atlantic States where flue-cured is the principal tobacco the

Commercial Fertilizer Used Per Acre for Specified Crops Harvested in 1938 [1]

	Corn	Wheat	Oats	Potatoes	Cotton	Tobacco	Sugar beets
	Lb.	*Lb.*	*Lb.*	*Lb.*	*Lb.*	*Lb.*	*Lb.*
New England	227	[3]	66	1,665	----------	[3]	----------
Middle Atlantic	151	230	186	706	----------	[3]	----------
East North Central	37	106	19	183	----------	[3]	205
West North Central	3	5	3	34	----------	[3]	50
South Atlantic	134	271	189	1,132	348	931	----------
East South Central	50	112	[3]	516	201	265	----------
West South Central	16	1	[3]	247	22	----------	----------
Mountain	[2]	[2]	1	23	----------	----------	61
Pacific	12	[2]	4	194	[2]	----------	35
United States	39	27	--------	437	117	----------	85

[1] The indicated application of fertilizer is the total application on the reporting farms divided by the acreage of crops grown. [2] Less than 1 pound. [3] No information was obtained relative to fertilizer use on crop indicated.

indicated application was more than 900 pounds per acre. This compares with an average of 265 pounds per acre in the East South Central States where burley, fire-cured and dark air-cured types are grown.

Potatoes also are a heavy user of fertilizer in relation to the acreage grown. Less than 1 percent of the cropland is planted to this crop which uses around 7 percent of the total fertilizer. Acreage applications were heavy in the States along the Atlantic Coast, especially in New England where the average quantity used per acre was 1,665 pounds. Fertilizer use on potatoes was also fairly heavy in the East South Central States. Average applications of fertilizer in the various groups of States tended to be heavier on potatoes than for any other crop included in the study, but the potato acreage is concentrated to a greater extent than is tobacco in areas where fertilizers are used but little. Consequently, per acre fertilizer applications on potatoes average less than on tobacco.

Use of fertilizer on sugar beets has been expanding rapidly in the past decade. In the humid sugar beet areas applications average higher than in the irrigated areas. In the humid areas the reports show that complete ready-mixed fertilizers were in general use, whereas in the irrigated areas phosphates usually of high analyses were commonly applied.

A. P. Brodell.

UNITED STATES: Exports and imports of specified agricultural commodities June, 1939 and 1940, and September–June, 1938–39 and 1939–40 [1]

Commodity	Unit	June		September-June	
		1939	1940	1938–39	1939–40
Exports:					
Pork—		*Thousands*	*Thousands*	*Thousands*	*Thousands*
Cured pork [2]	Lb.	8,083	1,013	59,999	43,394
Other pork [3]	Lb.	6,638	2,116	35,112	69,896
Total pork	Lb.	14,721	3,129	95,111	113,290
Lard, including neutral	Lb.	22,682	12,697	215,746	208,618
Wheat, including flour	Bu.	6,797	1,835	91,350	38,069
Apples, fresh [4]	Bu.	83	26	11,641	2,822
Pears, fresh	Lb.	82	92	131,533	64,547
Tobacco, leaf	Lb.	15,156	20,257	401,108	274,834
Cotton, excluding linters (500 lb.)	Bale	120	139	3,187	6,157
Imports:					
Cattle	No.	27	40	640	545
Beef, canned, incl. corned	Lb.	7,879	4,851	67,536	67,346
Hides and skins [5]	Lb.	22,400	28,497	249,574	270,300
Barley malt	Lb.	11,297	3,333	87,453	52,748
Sugar, cane (2,000 lb.)	Ton	287	302	1,939	2,673
Flaxseed	Bu.	1,802	521	16,530	11,577
Tobacco, leaf	Lb.	5,706	5,612	49,311	52,007
Wool, excluding free in bond for use in carpets, etc	Lb.	6,336	11,311	58,886	150,988

[1] Corrected to July 24, 1940.
[2] Includes bacon, hams, shoulders, and sides.
[3] Includes fresh, pickled or salted, and canned pork.
[4] Includes baskets, boxes, and barrels in terms of bushels.
[5] Excludes the weight of "other hides and skins" which are reported in pieces only.

Office of Foreign Agricultural Relations. Compiled from official records of the Bureau of Foreign and Domestic Commerce.

Year and month	Industrial production (1923–25=100)[1]	Income of industrial workers (1924–29=100)[2]	Cost of living (1924–29=100)[3]	(1910–14=100) Wholesale prices of all commodities[4]	Prices paid by farmers for commodities used in—[5] Living	Production	Living and production	Farm wages	Taxes[6]
1925	104	98	101	151	164	147	157	176	270
1926	108	102	102	146	162	146	155	179	271
1927	106	100	100	139	159	145	153	179	277
1928	111	100	99	141	160	148	155	179	279
1929	119	107	99	139	158	147	153	180	281
1930	96	88	96	126	148	140	145	167	277
1931	81	67	88	107	126	122	124	130	253
1932	64	46	79	95	108	107	107	96	219
1933	76	48	76	96	109	108	109	85	187
1934	79	61	78	109	122	125	123	95	178
1935	90	69	80	117	124	126	125	103	180
1936	105	80	81	118	122	126	124	111	182
1937	110	94	84	126	128	135	130	126	187
1938	86	73	82	115	122	124	122	124	186
1939	105	83	82	113	120	122	121	124	
1939—July	101	80	81	110			120	126	
August	103	83	81	109			119		
September	111	86	82	115	122	123	122		
October	121	91	82	116			122	126	
November	124	93	82	116			122		
December	128	93	82	116	121	123	122		
1940—January	119	93	82	116			122	119	
February	109	89	82	115			122		
March	104	87	82	114	121	125	123		
April	102	86	82	115			123	124	
May	106	87	82	114			123		
June	114	89	83	113			123		
July[7]				113			122	129	

Year and month	Index of prices received by farmers (August 1909–July 1914=100) Grains	Cotton and cottonseed	Fruits	Truck crops	Meat animals	Dairy products	Chickens and eggs	All groups	Ratio of prices received to prices paid
1925	157	177	172	153	140	153	163	156	99
1926	131	122	138	143	147	152	159	145	94
1927	128	128	144	121	140	155	144	139	91
1928	130	152	176	159	151	158	153	149	96
1929	120	144	141	149	156	157	162	146	95
1930	100	102	162	140	133	137	129	126	87
1931	63	63	98	117	92	108	100	87	70
1932	44	47	82	102	63	83	82	65	61
1933	62	64	74	105	60	82	75	70	64
1934	93	99	100	103	68	95	89	90	73
1935	103	101	91	125	118	108	117	108	86
1936	108	100	100	111	121	119	115	114	92
1937	126	95	122	123	132	124	111	121	93
1938	74	70	73	101	114	109	108	95	78
1939	72	73	77	105	110	104	94	93	77
1939—July	66	73	80	99	107	96	89	89	74
August	64	71	70	99	101	100	90	88	74
September	83	76	73	117	117	107	102	98	80
October	77	74	73	128	112	112	108	97	80
November	79	75	66	123	107	117	117	97	80
December	87	82	65	96	101	118	97	96	79
1940—January	90	85	66	117	103	119	91	99	81
February	91	85	76	168	101	118	98	101	83
March	92	85	73	128	102	114	83	97	79
April	96	85	81	145	104	110	82	98	80
May	92	83	88	133	108	106	84	98	[7] 80
June	83	81	104	134	102	104	81	95	[7] 77
July	78	80	89	98	110	105	88	95	[7] 78

[1] Federal Reserve Board, adjusted for seasonal variation. [2] Adjusted for seasonal variation.
[3] Monthly indexes for months not reported by the Bureau of Labor Statistics are interpolated by use of the National Industrial Conference Board cost-of-living reports.
[4] Bureau of Labor Statistics index with 1926=100, divided by its 1910–14 average of 68.5.
[5] These indexes are based on retail prices paid by farmers for commodities used in living and production reported quarterly for March, June, September, and December. The indexes for other months are interpolations between the successive quarterly indexes.
[6] Index of farm real-estate taxes per acre. Base period represents taxes levied in the calendar years 1909–13, payable mostly within the period Aug. 1, 1909–July 31, 1914. [7] Preliminary.

NOTE: The index numbers of industrial production and of industrial workers' income shown above are not comparable in several respects. The base periods are different. The production index includes only mining and manufacturing; the income index also includes transportation. The production index is based on volume only, whereas the income index is affected by wage rates as well as by time worked. There is usually a time lag between changes in volume of production and in workers' income, since output can be increased or decreased to some extent without much change in the number of workers.

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